3.2.2 Ecological Priorities *within* each Ecological Landscape

Many different factors and processes can be used to identify ecological priorities for implementing conservation actions. For example, at an Ecological Landscape scale, priorities could be established by evaluating what actions are most easily accomplished, what actions best fit a site's capability, which actions would combine the efforts of multiple partners, or which actions address the needs of the rarest, most imperiled species in an area of the state. Different groups will identify priorities using different criteria based on their particular interests.

In the following section, ecological priorities (at a landscape scale) are identified by evaluating three components: species' distributions; their associations with habitats (natural communities); and the importance that the Ecological Landscape plays in a given natural community's management. These three components were evaluated to see where all were maximized at the same time.

As was described in Section 2.2, Ecological Landscapes are comprised of mosaics of natural communities and other land cover types (e.g., urban and agriculture). For any given natural community, some landscapes represent major opportunities for management and restoration, and others are less important. Similarly, in addition to a species' degree of probability of occurring in an Ecological Landscape, species have different levels of association with different natural communities. For example, Franklin's Ground Squirrels are significantly associated with oak barrens and pine barrens, but are moderately associated with dry-mesic prairies. More about Species of Greatest Conservation Need's habitat associations is covered in Section 3.3.

Given this "triangle" of the three combinations of species-natural community-Ecological Landscape interactions, it is possible to identify those combinations for each Ecological Landscape that potentially represent the best opportunities (e.g., from a capability, opportunity, or ecological potential perspective) to manage, protect, restore, and/or sustain Species of Greatest Conservation Need in specific natural communities. That is, those high priority situations where *all* of the following are true:

- There is a **high** or **moderate** degree of probability that the Species of Greatest Conservation Need occurs in manageable numbers in the Ecological Landscape, *AND*
- The Species of Greatest Conservation Need is **significantly** or **moderately** associated with the natural community, *AND*
- The Ecological Landscape represents a **major** opportunity to manage or sustain that natural community.

Because this analysis incorporated statewide characteristics that are independent of one another, there is not an even distribution of these high priority combinations across the Ecological Landscapes. Although it did not happen, it was possible that one or more Ecological Landscapes could have had no "species-natural community-Ecological Landscape" combinations meet all three of these criteria. As it turned out, the Southern Lake Michigan Coastal had the fewest "high scoring" combinations, while the Western Coulee and Ridges had the most. There are, of course, many factors that influence this wide range, including size of the landscape, current and past land uses, diversity of habitats and patch sizes.

Tables 3-25 to 3-40, Ecological priority habitat-species opportunities within Ecological Landscapes, present the high scoring "species-natural community-Ecological Landscape" combinations. The following list identifies the page on which each set of combinations appear, presented by Ecological Landscape: Superior Coastal Plain (3-328), Northwest Lowlands (3-331), Northwest Sands (3-333), North Central Forest (3-337), Northern Highland (3-342), Forest Transition (3-345), Northeast Sands (3-347), Northern Lake Michigan Coastal (3-349), Central Lake Michigan Coastal (3-352), Western Prairie (3-354), Western Coulee and Ridges (3-357), Southwest Savanna (3-366), Central Sand Plains (3-369), Central Sand Hills (3-373), Southeast Glacial Plain (3-376), and Southern Lake Michigan Coastal (3-384). The third column of each table is organized by vertebrate taxa group (birds, fish, herptiles, and

mammals). If a taxa group is not listed, then no Species of Greatest Conservation Need in that taxa group met the criteria. When interpreting and using the information presented in these tables, it will be imperative for readers to consider the following issues:

1. **Groups of species with similar needs** . Readers are encouraged to *use these lists simply as starting points in planning and implementing various conservation efforts.* For example, projects focused on a particular species-natural community-ecological landscape combination may be able to incorporate the needs of many other Species of Greatest Conservation Need species (as well as those species that are not rare or declining) that also occur in that natural community in the Ecological Landscape.

2. **Potential compatibility issues**. In some cases, although the high-scoring Species of Greatest Conservation Need listed together within a natural community are all significantly or moderately associated with that natural community, they may have different management needs, may use the habitat at different times of the year, or at different life stages. At times, managing for one or several Species of Greatest Conservation Need may conflict with other Species of Greatest Conservation Need. This is not to be unexpected and ecologists and land managers have long wrestled with how best to balance species' management needs.

3. **Species of Greatest Conservation Need that fall through the "coarse filter" (that is they have no high scoring combinations at the landscape level)**. Seven (7) out of the 152 vertebrate Species of Greatest Conservation Need do not meet all the criteria listed above and thus do not appear in any of the ecological priority habitat-species opportunities by Ecological Landscape tables presented in the following section. Generally speaking, these species tend to be associated with natural communities in areas of the state that do not represent the best opportunities to manage for those communities, or there is only a moderate probability that they occur in manageable numbers within an Ecological Landscape. As readers will see in Table 3-23, most of these species have a low or very low relative abundance in Wisconsin compared to the rest of their range. See Section 3.1 for further discussion on the relative abundance of species.

   The Department and its partners will need to ensure that adequate conservation actions are implemented at "finer scales" (both the natural community and species levels) to meet the needs of those species that are not well represented in this Ecological Landscape scale assessment.

Table 3-23. Vertebrate Species of Greatest Conservation Need with no high scoring "natural community-Ecological Landscape" combinations

	Vertebrate Species of Greatest Conservation Need with *no* high scoring combinations at the landscape scale		
	Species with **high** relative abundance in WI compared with the rest of their range	Species with **moderate to low** relative abundance in WI compared with the rest of their range	Species with **very low** relative abundance in WI compared with the rest of their range
Mammals			
Birds		American Black Duck	Barn Owl
			Kirtland's Warbler
Herptiles			Western Ribbon Snake
Fishes			American Eel
			Skipjack Herring
			Striped Shiner

4. **Species of Greatest Conservation Need with only a limited number (4 or fewer) of high scoring natural community-ecological landscape combinations.** Some Species of Greatest Conservation Need have high-scoring "natural community-Ecological Landscape" combinations only a few times. For example, Kentucky Warbler only shows up in the following tables three times (in the Western Coulee and Ridges in floodplain forest, dry-mesic forests, and mesic forests). Similarly, Boreal Chickadee is a high priority only three times (in northern wet forests in the Northwest Lowlands, North Central Forest, and Northern Highland). Species with four or fewer high scoring natural community-Ecological Landscape combination scores are listed in the table below, arranged by their relative abundance in Wisconsin.

Table 3-24. Vertebrate Species of Greatest Conservation Need with only a limited number of high scoring "natural community-Ecological Landscape" combinations

Species of Greatest Conservation Need with 4 or fewer high scoring combinations at the landscape scale			
	Species with **high** relative abundance in WI compared with the rest of their range	Species with **moderate to low** relative abundance in WI compared with the rest of their range	Species with **very low** relative abundance in WI compared with the rest of their range
Mammals		American Marten	White-tailed Jackrabbit
Birds		Greater Prairie-Chicken	Snowy Egret
		Nelson's Sharp-tailed Sparrow	Yellow-throated Warbler
		Red-necked Grebe	
		Worm-eating Warbler	
		Boreal Chickadee	
		Kentucky Warbler	
		Wilson's Phalarope	
		King Rail	
		Spruce Grouse	
		Caspian Tern	
Herptiles		Midland Smooth Softshell Turtle	Western Worm Snake
		Northern Ribbon Snake	
Fishes	Kiyi	Lake Chubsucker	Goldeye
	Shortjaw Cisco	Black Redhorse	Bluntnose Darter
	Blue Sucker	Gravel Chub	Pallid Shiner
	Crystal Darter	Paddlefish	
		Shoal Chub (Speckled Chub)	
		Slender Madtom	
		Ozark Minnow	
		Black Buffalo	

Readers are encouraged to note those infrequent situations where these Species of Greatest Conservation Need do occur because these natural community-landscape combinations may represent their best opportunities for management and recovery in the state. In the following tables, species that with four or fewer high scoring "species-natural community-Ecological Landscape" combinations are *italicized* in the individual Ecological Landscape tables below**.**

5. **Invertebrate Species of Greatest Conservation Need.** As discussed in Section 8, due to a number of issues invertebrates are not necessarily associated with the natural communities used in this report. Further, the range and distribution for many invertebrates are not well correlated with the Ecological

Landscapes used in the report. As a result, invertebrate Species of Greatest Conservation Need are not listed in the tables in this section. Readers are encouraged to reference the material in Section 8 for further discussion of habitat associations and distributions of invertebrate Species of Greatest Conservation Need and how their needs could be incorporated into the high scoring vertebrate "species-natural community-Ecological Landscape" combinations.

6. **Natural Communities that do not harbor any vertebrate Species of Greatest Conservation Need** A few natural communities that are "**major**" opportunities within an Ecological Landscape do not harbor any vertebrate Species of Greatest Conservation Need that have a high scoring "species-natural community-Ecological Landscape" combinations. These communities (dry and moist cliffs, Great Lakes rockshore, and algific talus slopes) tend to occupy small areas, both historically and currently. These natural communities can be *very important* for many rare invertebrates and plants.

7. **Vertebrate Species of Greatest Conservation Need listed multiple times as priorities**. Readers will also see in the following pages that some species meet the "species-natural community-Ecological Landscape" priority combinations many times. For example, Wood Turtle is listed 79 times in the following tables. These species tend to be associated with many habitats and occur in many regions of the state.